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February 2007

Hawaii Longline Fishermen's Experiences with the Observer Program

Stewart D. Allen and Amy Gough

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Pacific Islands Fisheries Science Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

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Cover photo courtesy of Pacific Islands Regional Observer Program. Observer Aaron Eichstedt is seen measuring albacore tuna.

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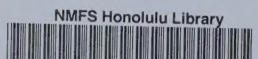

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INTRODUCTION

This report describes a subset of the results from a socio-cultural study of fishermen in the Hawaii-based longline fleet. The broader study, conducted in 2003–2004, was designed to compile a social profile of the longline fishing industry of Hawaii and provide information about its participants to decision makers. As the primary producer of Hawaii's fresh pelagic fish, the longline fleet has been heavily regulated with little analysis of the socio-cultural impacts of regulations and management.

Throughout the course of the broader study, fishermen described their experiences with observers and the program. Although experiences with observers was one of the topics included in the interviews, fishermen often brought up the topic before researchers introduced it. Observers accompany fishing trips to monitor interactions with protected species on the fishing grounds. Because the observers live on-board with the captain and crew during their 2- to 4-week fishing trips, some interesting dynamics emerge. Fishermen also described their interactions with the National Marine Fisheries Service (NMFS) observer program staff in Honolulu, who schedule observers to go on fishing trips and handle reimbursement of expenses associated with observers.

This paper has two main objectives:

1) Describe fishermen's experiences with and reactions to the observer program; and
2) Evaluate issues and patterns of interaction with observers based on the ethnicity of the fisherman (owner, captain, and crew) and other variables.

In the course of searching for relevant literature, we came across anecdotal accounts of fishermen's experiences with observers in other fisheries but did not find any systematic studies that described experiences with observers from the perspective of a full range of owners, captains, and crew from a given fleet. Therefore, another purpose of the study was to encourage other systematic observations of relationships between fishermen and observers.

First, we provide overviews of the Hawaii longline fleet and the observer program, followed by description of the study's methods, including the interviewers, sampling, and interview procedures. After describing the sample, we then present the results: first, for the entire sample; then for the longline owners, captains, and Hawaii-based crew (as a group and by ethnicity—Vietnamese-American, Korean-American, and Euro-American); and, finally, for the Filipino crew members.[1]

To conclude, we summarize the main findings, discuss implications for the observer program, and suggest direction for future research efforts.

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[1] At the time of the study, Filipinos comprised the vast majority of crew on the longline vessels.

The Hawaii-based Longline Fleet

The Hawaii-based longline fishery, which lands the vast majority of the Hawaii commercial catch of pelagic fish, has been a limited entry fishery since 1994 with a cap of 164 vessels.[2] About 110 to 120 vessels were active during the time of the study. The longline fleet consists of vessels ranging from 50 to 110 ft in length, nearly all homeported at one of three sets of docks in Honolulu. Vessels are all U.S. flagged and are generally fished with a captain and three to five crew members.

Hawaii-based longline vessels traditionally targeted bigeye tuna (*Thunnus obesus*), yellowfin tuna (*Thunnus albacares*), and swordfish (*Xiphias gladius*). Between 1994 and 1999, the industry landed an annual average of 15.9 million pounds, with tuna comprising an average of 60 percent of total landings (lbs). Bigeye constituted 55 percent of the tuna landings, albacore 27 percent, and yellowfin 18 percent.[3] The remainder of the catch was swordfish and mixed pelagic species.

The longline industry provides fresh whole fish to the market. The most significant distributor for all types of fish landed in Honolulu is the local fish auction, a unique service not available to fishermen in many other areas. Nearly all longline vessels sell directly to the auction, located adjacent the longline docks, where fish are purchased by both export wholesalers and local retailers. The auction system brings buyers and sellers together and eliminates the need for additional marketing. As fish is graded by piece, buyers immediately purchase fish, by piece, from the auction floor.

Despite relatively low landings by weight compared to ports nationwide, pelagic fish landed in Honolulu have substantial economic value, reflecting the high local and export market demand for fresh fish. The high prices also reflect social and cultural values that Hawaii residents and visitors, as well as Japan residents and others to whom Hawaii fish are exported, associate with fresh ahi (bigeye and yellowfin tuna) and other pelagic species. For example, in 2002–2003, Honolulu ranked 43rd among major U.S. ports in pounds of commercial fishery landings but ranked 10th in the value of fish landed (NMFS 2003). In 2003, 110 longline vessels took a total of 1,215 trips and set nearly 30 million hooks, catching about 17 million pounds of fish yielding $38.6 million in revenue (Western Pacific Regional Fisheries Management Council 2004).

The longliners fish both inside and outside of the U.S. Exclusive Economic Zone (EEZ), the area extending from 3–200 nmi offshore. Hawaii's longline fleet includes vessels previously used for fishing in the Gulf of Mexico, the Atlantic, and elsewhere. More recently, vessels from American Samoa have become part of the Hawaii longline fleet. Longline owners and captains represent a number of ethnicities; at the time of the

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[2] A cap of 164 permits had actually been in effect since 1991 as a moratorium until the limited entry program was established in 1994.

[3] In 2002, when the Hawaii swordfishery was shut down, tuna catch made up a larger component of the total landings; however, distribution of tuna species was roughly the same—bigeye 50 percent, yellowfin 21 percent, and albacore 27 percent.

study, roughly one-third of the owners were Vietnamese-Americans, one-third Korean-Americans, and one-third Euro-Americans.

The longline fleet operates under a number of regulations in addition to a cap on the number of vessels and a requirement to carry NMFS-authorized observers. In the late 1980s, a number of longline vessels relocated to Hawaii to fish tuna, and subsequently swordfish, creating concern on behalf of local fishermen in the area. As the larger longline vessels began fishing the same waters as small-scale fishermen, regulations restricted these larger, commercial, longline vessels to fishing at least 25-50 miles off shore, so as to decrease competition.

In the late 1990s, concern for protecting the leatherback, loggerhead, olive ridley, and green sea turtles was prompted by the frequency of sea turtle interactions with deployed longline fishing gear.[4] In 1999, conservation groups sued NMFS on this issue. The suit charged that the longline industry's incidental catch (take) of threatened and endangered sea turtles posed a threat to the survival of Pacific populations of these protected species, particularly leatherback and loggerhead turtles, and that NMFS failed to conduct proper environmental assessments of the regulations underlying this fishery.

As a result, the Federal Court in Honolulu issued an injunction on November 23, 1999, leading to the temporary closure of certain waters (north of Hawaii) to Hawaii-based pelagic longline vessels. Subsequent court orders in June 2000 required NMFS to curtail longline fishing for swordfish and mandated NMFS to prepare an Environmental Impact Statement. The impact statement, prepared by NMFS, included a series of actions to reduce the adverse effects of fishing vessels' interaction with sea turtles. These actions later became regulation consistent with the temporary closure of the swordfishery, and included:

- Prohibition on swordfish-style longline fishing in waters south of Hawaii (from 0° to 15° N)
- Seasonal area closures in areas from 145° W to 180° during April and May

The final environmental impact statement (FEIS) for pelagic fisheries published March 30, 2001 (and implemented in 2002), contained measures that closed the Hawaii-based longline swordfish fishery (NMFS, 2001a). This closure was a significant event for many fishermen, particularly the fishermen of Vietnamese ancestry who had relocated to Hawaii in the late 1980s, nearly all of whom had targeted swordfish (as did some Euro-Americans who had relocated from the East Coast). Hawaii-based vessels that had targeted swordfish were forced to leave Hawaii, switch target species from swordfish to tuna, or make other adaptations. In late 2004, NMFS reopened the swordfish fishery on a limited basis, with caps on fishing effort and interactions with sea turtles. The new

[4] Interactions with these species occur at a higher rate with use of the "shallow-set" swordfish longline gear and at a lower rate with the "deep-set" tuna longline gear.

fishery regulations also required vessels targeting swordfish to carry an observer on every trip.[5]

Hiring and retaining qualified crew has been another challenge for longline owners; the number of crew available and the composition of crew are highly dynamic. Some Hawaii-based crew members share the same ethnicities as owners; during the study, however, the vast majority consisted of temporary laborers from The Philippines, supplemented by crew from Indonesia and The Republic of Kiribati. These foreign laborers hold limited entry visas to work in the United States. In addition, some residents of The Federated States of Micronesia crew on Hawaii-based vessels and have their own unique resident status.[6]

The Hawaii Longline Observer Program

In the initial years of federal permitting of the Hawaii-based longline fleet, NOAA Fisheries relied exclusively on shoreside sampling to estimate vessel activity and landings (Ito, 1994). To collect more reliable data, a federal logbook system was implemented in 1990, requiring recording of target species and incidental catch for each trip. In 1994, analysis of logbook data resulted in an estimated number of sea turtle interactions that exceeded the level allowed by the Biological Opinion (NMFS, 2001b). NMFS replaced voluntary observer placement with a mandatory program in February 1994, primarily to document interactions of longline gear with sea turtles.

The authority to place observers on-board is granted by the Magnuson-Stevens Fishery Conservation and Management Act, under the Pelagic Fishery Management Plan and its biological opinion and incidental take statement resulting from Section 7 consultation under the Endangered Species Act. The Marine Mammal Protection Act (MMPA) is another source of authority for observer programs.

The observer program has become increasingly important to understanding the effects of longline fishing in the Pacific. Observer data has led to better estimates of the interactions between longline fishing and species considered to be at risk. Data are used to prepare annual reports as required by the current biological opinion, provide reports to the Western Pacific Fishery Management Council, and provide estimates of seabird mortality to the U.S. Fish and Wildlife Service.

The Pacific Islands Regional Office in Honolulu is responsible for monitoring vessel activity and deploying observers on at least 20 percent of Hawaii-based deep-set longline trips targeting bigeye tuna and 100 percent of the Hawaii-based shallow-set longline trips targeting swordfish. Prior to departing on a fishing trip, vessel owners are responsible for contacting the observer program manager to arrange for placement of an observer when applicable. Observers are randomly assigned to vessels in the tuna fishery. Vessel owners are not responsible for paying any portion of observers' salaries and are

[5] These trips occurred after the study period and were therefore not covered by the interviews.
[6] Laborers from the Federated States of Micronesia are granted permission to access shore areas.

reimbursed a flat rate of $20 per day for food and accommodation expenditures during the fishing trip.

The responsibilities of an observer on-board a vessel are defined by the Hawaii Longline Observer Program Field Manual (Hawaii Longline Observer Program, 2003). Observers collect information about vessel fishing gear characteristics and operation, species composition of the catch, interactions with protected species, and biological (life history) data. In addition to describing mission-critical activities, the manual addresses other responsibilities on-board, requiring observers to:

> Perform their duties in such a manner as to minimize interference with fishing operations…obtain permission from the vessel captain before using any vessel equipment"; and are not to "…dictate procedures or direct fishing operations… be involved with crew responsibilities, such as standing watch or helping with fishing procedures… share housekeeping routines such as dish washing and general clean up with the crew.

The manual also specifies that the vessel captain should cooperate with the observer in the performance of the observer's duties, ensure safe embarking and debarking of the observer, provide observers living quarters comparable to those of full crew members, and provide observers with meals, snacks and amenities normally provided to crew members.

The Hawaii-based observer program is one of 14 programs nationwide, coordinated by a National Observer Program office created in 1999 within NMFS Office of Science and Technology.[7]

STUDY METHODS

The information presented in this report is a subset of findings from a broader sociological study of the Hawaii-based longline industry. For the broader study, we obtained information from 234 individuals—primarily longline vessel owners, captains, and crew— between March 2003 and October 2004. Information was obtained from one or more fishermen (owners, captains, and crew) on over 70 percent of the active vessels. Information from the 234 interviews was captured in qualitative and quantitative data bases. Out of the 234 interviews, 189 individuals discussed the observer program. These data are analyzed in this report.

Because the overall study was conducted by University of Hawaii employees with University funding, it required review by the University's Committee on Human Studies.

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[7] The mission of the National Observer Program is to provide a formalized mechanism for NOAA Fisheries to address observer issues of national importance and to develop policies and procedures to ensure that NOAA Fisheries observers and observer programs are fully supported. The NOP maintains a web site at: http://www.st.nmfs.gov/st4/nop/index.html

On November 1, 2002, the project was determined to be exempt from Department of Health and Human Services regulations on research with human subjects. Researchers subsequently obtained a waiver to the signed informed consent procedure, but all fishermen were informed about the study, uses of the information, confidentiality, and other aspects of the study and their involvement.

Interviewers

All of the interviews were conducted by the same interviewer with the assistance of appropriate interpreters: one Vietnamese interpreter, one Tagalog/Ilocano interpreter (for Filipino crew), and two Korean interpreters. The interpreters were necessary for talking to fishermen who spoke little or no English or who felt uncomfortable communicating primarily in a second language (English). Even fishermen who were fluent or conversational in English could communicate some sentiments more effectively in their native language.

The interpreters also functioned as community liaisons whose presence and interest in the fishermen helped to create a more comfortable atmosphere even when interpretation was not required. This turned out to be an extremely valuable role because of the nature of the research, which required fishermen to trust the interviewers and talk openly. The first time fishermen were approached and asked if they would like to talk about their experiences, some were wary and refused to answer some types of questions. Over time, as the fishermen got to know the interviewer and interpreter they would talk more openly about a wider range of topics. The interviewer and interpreters also used participant observation as a study method. Over time they came to be perceived by many fishermen as part of the longline community.

Sampling

A stratified quota sampling procedure was used wherein representation was sought from the various roles (owner, captain, crew) and ethnicities (primarily Vietnamese-American, Korean-American, Euro-American, and Filipino) present in the industry. As the study progressed, researchers became aware of social networks within these strata and attempted to ensure that representatives from each major social network were interviewed.[8]

Potential interviewees were identified through a sequential sampling process, beginning with one contact within a particular subsection of the Hawaii longline community. Each ethnic group was approached in this manner. Upon completion of an interview, respondents were asked to suggest additional fishermen with whom researchers could speak. For owners and captains this led to development of samples of

[8] For example, within the Korean-American fishing community there appeared to be at least two social networks (groups of individuals who affiliated more with one set of fishermen than the other). We made sure that we interviewed individuals from each group.

Vietnamese-American, Korean-American, and Euro-American industry participants, while for crewmen this ensured adequate representation of foreign Filipino and local Hawaii-based crew. In many cases, previously interviewed fishermen introduced the interviewer to other fishermen, assuring them that the interviewer "was ok." For example, Filipino crew who had already been interviewed served as a conduit to newly arrived crew.

Very few fishermen who were approached refused to be interviewed. Some fishermen did make it clear that they were not going to provide any information but there was no reason to believe that they represented a particular set of viewpoints or social groups. Some who were initially suspicious later agreed to be interviewed after becoming more familiar with the researcher and interpreters.

Interview Procedures

Because the study was ethnographic in nature and did not involve formal survey methods, standardized questionnaires were not used.[9] Instead, the interviewer and interpreter were provided with a list of general topics for discussion and attempted to touch on most of them during the course of the interviews. This approach was also consistent with the exploratory nature of the study.

Many of the interviews were not really interviews, but a series of "talk story" sessions conducted when fishermen were in port and available. As a result, the information obtained from individuals was continuously updated until all relevant topics had been covered and the accuracy and breadth of responses was deemed sufficient for analysis. In most cases multiple conversations with an individual occurred before the interview, which was really more of an oral history, was considered completed.

Fishermen were encouraged to address social and cultural aspects or benefits of longline fishing and the meaning of those characteristics to their lifestyles. The fishermen typically provided information about their background, how they came to be involved in the fishery, the nature of their job, what they liked most and least about their work, perceptions of the industry, and their community. They talked about social networks, both in and outside the longline industry. They also talked, often at length, about their perceptions of and experiences with the many regulations affecting the longline industry, including observers.

Nearly all interviews were conducted at or near the Honolulu fishing piers. In some cases, interviewees preferred meeting on their own vessel, in their home, at a fishing supply store or nearby central location (restaurant or park). A limited number of

[9] We did attempt to obtain a common set of information for demographic variables such as age, religion, level of education, marital status, and fishing experience, as well as a limited number of attitudinal variables. However, the bulk of the quantitative data came from coding qualitative information into relevant categories.

interviews were conducted with both the husband and wife present, while others took place with just the fisherman, sometimes with other fishermen present.

For portions of the interview relevant to observers, fishermen were asked if they had experience with the observer program. If so, they were asked about the nature of the experience and to characterize it as 'no problem', 'a moderate problem', or 'a major problem.' A 'prefer' category was subsequently included because researchers encountered some fishermen, predominantly Filipino crew members, who reported preferring trips when observers were on-board.

Fishermen were then asked to explain the reasons behind their attitudes toward observers and whether their opinions were formed primarily as a result of a) their attitudes toward the observer program and its goals, b) from specific incidents with observers or program implementation, or c) both. Fishermen also indicated, for each of nine potential types of interactions with observers and the program, whether each had been a problem or not in their experience. This allowed for comparison of the relative importance and prevalence of specific problems identified.

In many cases, the interviewer did not have to broach the topic of observers. Owners or captains frequently brought up the issue and talked about it at great length, especially if they had recently had what they defined as a negative experience with an observer or the observer program. These discussions often revealed strong emotions surrounding particular incidents involving a particular observer or the observer program. Additionally, these discussions often revealed confusion over the role of NMFS enforcement, the observer program, and other monitoring agencies.

DESCRIPTION OF THE SAMPLE

Out of the sample of 234 fishermen, 199 discussed observers and the observer program to some extent. This included fishermen from a variety of ethnicities, occupations, and roles in the Hawaii longline industry. This report presents results for the entire sample as well as for two distinct subgroups of fishermen: (1) Hawaii-based owners, captains, and crew members—together and separately by ethnicity, and (2) foreign Filipino crew members. The sample will be described using these divisions.

Owners, Captains and Hawaii-based Crew

Seventy-six owners, captains, or Hawaii-based crew discussed observers. Of these, 67 percent were involved as owner or operator to some extent (21 vessel owners, 11 owner/captains, and 19 captains). Thirteen Hawaii-based crew members are included in this sector because a majority reported either having previous work experience as a captain or aspiring to work as captain. Two fishermen had previously worked as crewmen, but at the time of the interview were employed on land servicing the longline industry. Three supply store owners were included because they also owned vessels. Finally, this

group included seven wives of vessel owners or captains who participated in the fishing business and were familiar with Hawaii-based observers and the program.[10]

Many results are presented separately for three main ethnicities in this group: Vietnamese-Americans; Korean-Americans; and Euro-Americans.

- *Vietnamese-Americans.* In October, 2004, about 44 vessels in the fleet were owned by 35 Vietnamese-American families. The sample included 40 family members, 33 of whom discussed the observer program, including 8 owners, 1 owner/supplier, 3 owner/captains, six captains, 7 wives, and 8 crew or ex-crew members.

- *Korean-Americans.* About 33 vessels were owned by 25 Korean-American families. The sample included 19 individuals (reflecting an estimated 23 of these vessels); all but one shared opinions regarding the observer program. Of the 18 who did discuss observers, 7 were owners, 6 were owner/captains, 3 were captains, and 2 were suppliers. Cew members were not included because the number of Korean-American crew working in the Hawaii longline industry is very limited.

- *Euro-Americans.* About 35 Euro-American vessels are owned by some 25 families. The sample included 25 individuals representing 25 vessels, all of whom discussed the observer program. Of these, 6 were owners, 2 were owner/captains, 10 were captains, and 7 were Hawaii-based crew members.[11]

Filipino Crew

Vessel owners hire Hawaii-based laborers from a very small pool of people who work a number of vessels on a transitional basis, but frequently employ laborers from the Philippines and other regions. In October 2004, some 250 laborers were working as crewmen on the active vessels in the Hawaii-based fleet. The majority were from the Philippines, with Filipino crew members making up about 75 percent of crew in the Hawaii longline industry in October 2004. Our sample included 145 Filipino crew members, or about 60 percent of the overall Filipino crew population; 123 of these persons discussed the observer program.

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[10] We will refer to the interviewees as fishermen throughout the report.

[11] The Euro-American category includes 19 individuals born in the United States and 6 individuals of varied descent, born outside of the United States, who are generally now U.S. citizens. Within Hawaii's longline community, the latter individuals share opinions with and socially interact predominantly with the American (Euro-American) network of longline fishermen—in Hawaii considered 'haole'.

STUDY RESULTS

The results are presented first for the entire sample to provide a general overview. Next, we present the results for owners, captains and Hawaii-based crew, for the group as a whole and then highlighting key differences across major ethnic groups. The following sections then present the results in-depth, including representative quotes, for each major segment of the fleet: Vietnamese-Americans; Korean-Americans; and Euro-Americans. Finally, we discuss the results for Filipino crew members. Each of these sections is organized similarly, first describing the extent of problems, then the general nature of the problems, and then evaluations of specific aspects of observers and the observer program.

In each of these sections, it is important to note that the initial tables describe the proportion of each group who reported having no problems with the observer program as well as the proportion that had problems of varying degrees. Subsequent tables in each section describe in greater depth the nature of the problem only for fishermen reporting they had some type of problem with the observer program. Those tables therefore do not include fishermen who reported no problems, so the sample size typically drops markedly.

Entire Sample

Only 8 of the fishermen reported not having experience with observers; these were individuals relatively new to the fleet who had not yet taken trips with observers. Of the 189 fishermen who discussed their experiences with observers, 48 percent reported having no problems, 44 percent reported having problems, and 8 percent preferred having observers on trips (Table 1). All of the 15 who preferred observers were Filipino crew members (as will be explained later). Fishermen who said they had no problem did not prefer trips with observers; generally they just accepted them as givens.

Table 1. Extent of Problems with Observers

	Number of fishermen
Fishermen with experience with observers	189
Fishermen reporting no problem with observers	91
Fishermen reporting moderate or major problem	83
Fishermen reporting observers preferable	15

When asked about the nature of their concerns, 78 percent of those who expressed problems described a problem that was primarily rooted in the program and its implementation, 10 percent reported a problem that was grounded in experiences with specific individuals or incidents, and 12 percent reported problems stemming from both the program and specific individuals or incidents. Among fishermen expressing problems, 69 percent described the level of the problem as moderate and 31 percent as major (Table 2).

The interviewer coded reported problems as moderate or major based on the description of the problem as reported by the fisherman—what they said and how they

said it. In most cases, this differentiation was very straightforward. For example, one respondent might describe a problem and then conclude, "I am so miserable over this that it's destroying my business, family, and life." Another fisherman might talk about the same issue but conclude by saying "It's no big deal."

Table 2. Nature and Degree of Problems Reported with Observer Program (*n* = 83)

Nature of problem	% Fishermen
Fishermen reporting problems with overall program and concept	78
Fishermen reporting problems with specific individuals or incidents	10
Fishermen reporting problems with overall program and specific individuals or incidents	12
Degree of problem	
Fishermen reporting moderate problems with observers	69
Fishermen reporting major problems with observers	31

The degree and nature of fishermen's concern were interrelated. Ninety percent of those who reported moderate problems, compared to just 54 percent of those reporting major problems, said the nature of their problem was with the overall program.

Vessel Owners, Captains, and Hawaii-based Crew

All but four of the owners, captains, and Hawaii-based crew reported having experience with observers (Table 3). Reasons for lack of experience with the program generally included individuals (Hawaii-based crew, captains, or owners) who were new to the Hawaii longline fishery or those whose role in the industry did not allow them direct contact with observers or the program. An additional four fishermen in this group reported that observers were preferable and were not asked further about problems. The owners, captains, and Hawaii-based crew were roughly split among those who had no problems, moderate problems or major problems. Roughly one-third of the fishermen reported that they had no problems with the observer program.

Table 3. Owners, Captains, and Resident Crew Ratings of Extent of Problems with the Observer Program[12]

	Number	Percent (%)
No problems	25	32
Moderate problems	23	29
Major problems	23	29
No experience	4	5
Preferred observers	4	5
Total	79	100

Most of the 46 individuals citing some level of problem described a problem with the overall program (Table 4). The observer program was often perceived as a form of fishery enforcement. Although fines may have come from a variety of agencies and programs, fishermen commonly did not make this distinction, (incorrectly) attributing many types of fines to the observers, who do not have an enforcement role.

[12] Percentages in tables in this report may not total 100 as a result of rounding.

Table 4. Nature of Owners', Captains' and Resident Crews' Problem with the Hawaii Longline Observer Program

	Number of fishermen	Percent %
Problems with overall program only	29	63
Problems with specific individuals only	7	15
Problems with program *and* individuals	10	22
Total	46	100

Attitudes and beliefs regarding observers and the program were explored by learning more about nine potential problem areas expressed by fishermen during a small number of initial interviews. Subsequently, fishermen were asked whether or not each of the nine had been a problem; each fisherman could list as many of the nine as they desired. The 46 fishermen selected 125 total problems (Table 5; the following section on ethnic differences defines the meaning of each of the nine categories).

Table 5. Number of Times Owner, Captain, and Resident Crew Identified Each of the Nine Potential Issues as a Problem

Problem	Number of times problem mentioned	Particular problem as proportion of all problems selected
Don't trust monitoring	24	19%
Not reimbursed adequately	20	16%
Decreased on-board efficiency	17	14%
Inadequately trained observers	16	13%
Female observers	13	10%
No outlet for venting concerns	12	10%
Safety concerns	9	7%
Accommodation concerns	8	6%
Food Requirements	6	4%
Total problems stated	125	100%

The most commonly selected problem with the observer program among vessel owners, captains, and Hawaii-based crew was (a) the lack of trust of monitoring in general, which comprised 19 percent of the problems listed, followed by (b) lack of adequate reimbursement, which comprised 16 percent of the problems selected. Both of these reflected dissatisfaction with the idea of the observer program itself, coupled with its implementation, rather than stemming from an on-board incident or particular observer. Note that some of these categories are broader than others; "lack of trust in the program" is an issue that could have multiple dimensions, while "food requirements" is very specific.

Ethnic Differences in Perception of the Observer Program

This section describes the results separately for Vietnamese-American, Korean-American, and Euro-American owners, captains, and resident crew. Noticeable

differences, as well as some similarities, were evident across these three subgroups of owners, captains, and resident crew.

Differences regarding the extent of the problem are evident across the three ethnic groups, with over half of all Euro-Americans reporting 'no problem' (Table 6). Almost half of the Vietnamese-American fishermen reported moderate problems, while more than half of the Korean-American fishermen reported major problems.

Table 6. Perceptions Regarding Extent of Problems with Observer Program by Ethnic Group[13]

	Vietnamese-American $n = 33$	Korean-American $n = 18$	Euro-American $n = 20$	Total $n = 71$
No problem	21%	22%	70%	25
Moderate problems	45%	17%	25%	23
Major problems	33%	61%	5%	23

Korean-Americans and Vietnamese-Americans reported problems at a higher frequency, with 78 percent of fishermen in each ethnic sub-group reporting some level of problem. In contrast, only 30 percent of Euro-American fishermen (six fishermen) reported having problems with observers.

Not surprisingly, the reported nature of the problem also varied by ethnicity. Nearly 70 percent of the Vietnamese-Americans citing problems with the observer program described problems with the overall program (Table 7). Korean-American and Euro-American vessel owners also mentioned problems associated with the overall program, but to a lesser extent: 57 percent and 50 percent, respectively. The Euro-American fishermen reported problems with the program and individuals equally, but most had few complaints at all, with only a total of six individuals identifying any type of problem.

Table 7. General Nature of Perceived Problems with the Observer Program, by Ethnicity

	Vietnamese-American $n = 26$	Korean-American $n = 14$	Euro-American $n = 6$
Problem with overall program	69%	57%	50%
Problems with specific individuals[14]	31%	43%	50%

When asked about the nine problem areas, fishermen's most commonly selected problems were a lack of trust in monitoring, decreased efficiency, lack of training among observers, and failure to provide adequate reimbursement to vessel operators. However, the range of problems identified was quite different among ethnic groups (Table 8). For instance, Vietnamese-American and Korean-American fishermen identified a wider range of problems compared to the six Euro-American fishermen, who mentioned only four types of problems.

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[13] Slight differences in the total numbers represented in report tables and figures result from non-responses. In addition, several fishermen who discussed the observer program did not have personal experience with the Hawaii-based longline observer program, and thus did not not answer some questions.

[14] This includes problems with the overall program and specific observers. Responses have been considered together to distinguish those without problems with individual observer or incidents.

Table 8. Percentage of Individuals Selecting Particular Problem, by Ethnicity

	Vietnamese-American $n = 26$	Korean-American $n = 14$	Euro-American $n = 6$	Total $n = 46$
Don't trust monitoring	58%	33%	8%	24
Not reimbursed adequately	70%	25%	5%	20
Decreased on-board efficiency	53%	35%	12%	17
Inadequately trained observers	50%	25%	25%	16
Female observers	31%	69%	0%	13
No outlet for venting concerns	50%	50%	0%	12
Safety concerns	60%	40%	0%	15
Accommodations	50%	50%	0%	8
Food requirements	50%	50%	0%	6

Of the fishermen concerned with on-board safety, the majority were Vietnamese-Americans. Similarly, considering that less than half of the sample population was made up of Vietnamese-American individuals, they accounted for 70 percent of the complaints about reimbursements and more than half of the complaints regarding inadequately trained observers. Korean-American fishermen made up roughly one quarter of the sample but were responsible for almost 70 percent of the complaints about female observers. Table 9 summarizes the dominant concerns for each ethnic group; although the range of issues varied, all three shared a core set of concerns.

Table 9: Commonly Identified Problems with the Observer Program, by Ethnicity

	Vietnamese-American	Korean-American	Euro-American
Problem One	Don't trust monitoring	Female Observers	Inadequately trained observers
Problem Two	Lack of adequate reimbursement	Don't trust monitoring	Don't trust monitoring
Problem Three	Observers decrease on-board efficiency	Observers decrease on-board efficiency	Observers decrease on-board efficiency

In exploring data from the overall longline study, we have found that Hawaii longline fishermen report variability in experiences in previous fisheries, opinions of fishery management, levels of interaction with others in the longline community, and individual preferences. While variation in such factors is common *across* ethnic groups in the sample, notable differences in observer program issues also exist within each ethnic category, as described below. The following sections examine, in greater detail, each ethnic group's perceptions of and experiences with observers and the observer program.

Vietnamese-American Owners, Captains, and Crew

As discussed earlier, 79 percent of the Vietnamese-American fishermen reported having problems with the observer program and close to half described a problem that was 'moderate' in extent. Of those citing moderate problems, 93 percent cited the nature of the difficulty as 'problems with the overall program'. Of those who expressed major

problems with the observer program, 78 percent cited the nature of the problem as 'problems with specific individuals or incidents'.

The Vietnamese-American sample included the most diverse group (in terms of roles in the industry) of all the ethnicities; some are much more involved with on-board operations than others (Table 10).

Table 10. Perceived Extent of Problems Reported by Vietnamese-American Fishermen

	On-board		Not On-board		
	Owner/Captains, Captains	Hawaii-based Crew and ex-crew	Owner/Captains, Captains	Wives	Total
No problem	3	3	0	1	7 (21%)
Moderate problems	2	4	4	5	15 (45%)
Major problems	4	1	5	1	11 (33%)
No experience	0	0	0	0	0 (0%)
Total	9	8	9	7	33 (100%)

Although the Vietnamese-Americans had diverse issues with observers and the program, 21 percent (including both on-board and not-on-board individuals) said they had no problems. Positive experiences are reflected by one fisherman's opinion:

- *Observers? No problem; they call me uncle, love our food—we're supposed to have a budget to buy their food but when they come they like ours better because it's fresh and healthy. They help when they can, but on the other hand we have to do a lot to keep them safe.*

Another fisherman, realizing his own experiences were more positive than those of others, considered himself fortunate:

- *We don't have too many problems, because we've been lucky; the observers we've had don't pick difficult food to eat—and they even eat what we eat.*

When asked about the problem areas, Vietnamese-American fishermen were the only group to identify all nine as present to some extent. Four fishermen reported having just one of the specific problems while 10 identified two problems, seven identified three problems, three identified four problems, one identified five problems, and one identified all nine as problems for him.

The top four problems mentioned were lack of trust of the program, lack of adequate reimbursement, decreased fishing efficiency, and safety issues (Table 9). Almost half of the Vietnamese-Americans who reported their problems stemmed from the overall program and its implementation also said they lacked trust and had issues with reimbursement.

Table 11. Percent of Vietnamese-American Fisherman Identifying Each Specific Area as a Problem

Problem	Percent of total problems identified (%)	Number of responses
Don't trust monitoring	42	14
Not reimbursed adequately	42	14
Decreased on-board efficiency	27	9
Safety concerns	27	9
Inadequately trained observers	24	8
No outlet for venting concerns	18	6
Female observers	12	4
Accommodations	12	4
Food requirements	9	3

Concerns with the Program and Implementation

Three of the nine problem areas reflected dissatisfaction with the overall observer program and are described below. Although fishermen's experiences are organized by whether the concern stems from the program itself or from specific individuals or incidents, these two areas overlap in practice. The mutual cause-and-effect relationship does not allow the researcher, and in some cases the fisherman, to distinguish the origin of a reported problem.

For example, one captain reported a strong dislike of the observer program and reported a number of specific incidents on-board. When asked about the nature of the problem, he described an incident that led to him being fined and his fish confiscated. This economic effect targeted the vessel owner but quickly trickled down to affect his own salary—as well as his relationship with the owner. In addition, he felt 'entrapped' by the particular observer. Although this incident was limited to one trip, this fisherman expressed a strong dislike of the observer program for various additional reasons, blurring any distinct lines between problems with the program or with a specific individual or with the enforcement issue.

Trust and communication--The Vietnamese-American fishermen who said they lacked trust in the entire program and its methods (42 percent) closely associated the observer program with other monitoring agencies and programs, such as the Coast Guard and NMFS enforcement (which the Vietnamese-Americans do not often differentiate from other programs within NMFS). Quotes from the fishermen reflect their perception of the inherently invasive nature of external observation of fishing operations:

- *The big problem is they (observers) are sneaky.*

- *I don't like the concept of the program. . . the observers are out to get the fishermen. They are sneaky, permitting us to do certain things in the fishing grounds and then later imposing a fine.*

- *I don't like the idea of the program; plus they (observer) also slow down the workers and we never get reimbursed properly.*

A number of fishermen said the observer program had, at its inception, functioned as a voluntary program. Fishermen explained that observers "asked" to accompany a vessel on a fishing trip to learn their fishing techniques and the nature of the catch. A number of fishermen reported that vessel owners agreed to bring observers on-board to learn, but now were facing the repercussions from their early willingness to assist the agency. Some reported feeling that the information gained by observers on these early training trips was subsequently used against fishermen to impose fines, add regulations, and create the justification for implementing the mandatory observer program:

- *We agreed from the beginning that we would let them (observers) go to watch, so we have to keep our agreement. But they were supposed to be there to learn from us and really they are in the way.*

- *At first the observer program wasn't enforced. Observers would beg to come with us, saying they wanted to learn and no one could force it on us. We'd let them come along. We didn't know they'd put everything in a report and we'd suffer.*

- *We agreed to bring observers to learn. Then the observers wrote bad things about all of us. We [now] have to face the penalties.*

A majority of comments, such as those provided above, were offered by individual fishermen talking about personal experiences, but they indicated that they were speaking on behalf of "us"—the larger Vietnamese-American group. One fisherman was extremely upset by an observer whom he claims was sleeping while the crew members were setting the fishing line, yet later reported that regulations were broken. Another individual, who no longer works on-board a vessel, reported that on his most recent trip the captain decided to come back to port early because of the presence of the observer. These experiences were related in a way that suggests the speakers believed such problems were commonly experienced among Vietnamese-American fishermen in the fleet.

Some Vietnamese-American fishermen expressed dissatisfaction with the program from a cultural perspective. Many asserted that their culture and language were not considered by the observer program, and that the observers (and observer program) did not understand their belief system. The topic of inadvertent turtle takes exemplifies this viewpoint:

- *They don't know that our Vietnamese word for turtle is not the literal word, but [rather] the word for Goddess. We still have a $25,000 fine [even though] we don't want to catch them. We value them.*

- *They don't understand it's not just a legal issue. Because Vietnamese believe turtles are sacred—so we don't want to catch them.*

Reimbursement--Over 40 percent of Vietnamese-American fishermen expressed dissatisfaction with reimbursement aspects the observer program. Some expressed this concern individually, while others listed it in conjunction with other problems:

- *I would prefer that observers get money from their own program and bring their own food, so we don't have to wait and worry about reimbursements.*

- *The only problem is that I haven't been reimbursed lately.*

- *Reimbursements are a big problem. We used to get reimbursed, but not lately. The last three trips there's been no money. All the observers do is eat, sleep, and watch television.*

- *Cost with increased insurance is $20.00 per day [for each day] that the observer is on-board, and then of course food. I'm sometimes reimbursed the $20.00 a day, and sometimes not. It usually takes about seven to eight months.*

- *We had observers two or three times in the last year and haven't been reimbursed.*

- *Observers aren't a big problem. We were reimbursed last year all right, but I don't know about this year. It just depends—sometimes we have to nag, and sometimes it's okay.*

- *We had problems with the company contracted by observers. A new company took over and there should be improvements. The old problems include too many inconsistencies; people with multiple boats have some boats reimbursed and some never get reimbursed. It's just not worth fighting because it would cost us more money than we would earn back. But that's in the past. We don't need to talk about it anymore because it should be better now.*

A number of the Vietnamese-American fishermen had experience with the California observer program. As a result, some complaints or compliments were made by comparing the Hawaii with the California program:

- *We had three or four observers last year; the cost was okay and we were reimbursed. In California we don't get any observers because our boat has no shower so they don't want to come. For that reason, I'm very glad there is no shower.*

- *Observers are also not a big problem for me because I'm not doing anything illegal. We are always reimbursed for observer expenses—but that's not the case in California.*

- *On our last trip we had one, and the trip was two months [long]. He had to stay the whole time. So long! In California we don't get reimbursed, and we did in Hawaii.*

Outlet for voicing concerns--Problems of how and where to voice concerns with the observer program were reported by 18 percent of Vietnamese-American fishermen. These individuals also expressed dissatisfaction with the observer program structure, often revealing a perception that their interaction with program administrators was not encouraged. Fishermen often said that family members (on land) were extensively involved in attempting to solve problems with the observer program. Individuals finding inadequate reimbursement mechanisms often also expressed trouble in voicing concerns:

- *My father is very dissatisfied with observers so he has tried to track down people to complain. But this is to no avail. We're given the runaround when we try to complain. We just get answering machines, no return calls, and the language barrier makes it worse.*

- *The worst part is that there is nowhere to complain. The observers never want to face the complaints.*

- *Because of the language barrier our children have to try and call to get reimbursed, and we only get compensation if our children keep persisting. The people we contact about the program are just not helpful.*

A story told by one Vietnamese-American vessel captain illustrates many concerns (and the overlap between general and incident-specific issues), but also suggests that "lack of outlet to vent concerns" is a problem that can be overcome. The captain, who talked for an hour, was particularly disgruntled because of a bad incident with an observer. The fisherman reported that when this observer was assigned to his boat, his friends warned him that this observer always 'gives you a ticket.'

The captain said he began to understand those warnings and grew concerned over the safety of the observer, who did not communicate well and did not comply with on-board safety regulations such as wearing appropriate footwear on deck. The captain was further troubled by the social behavior of the observer. For instance, he believed the observer was being disrespectful to his Buddhist religion, particularly when the observer hung his clothes on a statue of Buddha. Finally, he was confused by the observer's slow pace in monitoring fishing.

As problems compounded on the trip, the captain repeatedly expressed his concerns to the observer. He also asked a crew member to reinforce safety and other expectations. Both captain and crew threatened to call the Coast Guard if the observer did not conform. At one point, the observer fell when rushing to see a 300-lb swordfish—while the captain was telling him to wait because the swordfish was not dead. The captain said he hesitated to confront the observer; expressing worry that, given the way the

observer program is structured, the same observer could be reassigned to his vessel in just a few months.

On return from the trip, the captain reported contacting the 'agent' for the observer program to discuss these problems. The fisherman said that one representative from NMFS and one representative from the Western Pacific Fisheries Management Council later visited his vessel. The representatives reportedly were very helpful, discussing his complaints at length. The fisherman said he felt confident that the observer would be fired.

Concerns Arising from Specific Individuals or Incidents

The individual observer is the point of real-time interface between the fisherman and overall program. As such, the experience of fishermen with individual observers tends to influence perceptions about the program itself. For instance, many Vietnamese-American fishermen reported trouble with the observer program in the context of a particularly negative experience with one observer or a specific incident.

Problems often arose from incidents including, but not limited to: decreased fishing efficiency resulting from observers on-board; perceptions that observers were inadequately trained; concerns with the safety of observers and/or crew; concerns associated with observers and food; concerns with accommodations; and concerns with female observers. These types of issues are reviewed below.

Efficiency and training--Twenty-seven percent of the Vietnamese-American fishermen expressed concern about observers decreasing operational efficiency. This was sometimes mentioned in conjunction with inadequate training:

- *Observers really slow us down; especially if we catch a fish or shark that we can't keep, the observers want us to bring it all the way in so they can measure it because they don't know what it is, and it's very dangerous.*

- *The ones that are not good just don't know what they're doing, aren't polite, and make our fishing take longer.*

- *Observers slow us down because they don't know the rules or the fish.*

Food, accommodations, and safety--A concern virtually unique to Vietnamese-American fishermen was the safety of observers and liabilities should an observer be injured or lost at sea. This was mentioned by 27 percent of Vietnamese-American fishermen.[15] Some believed that observers did not know how to take care of themselves on-board and were often unaware of dangerous situations, increasing stress levels of the

[15] Only one other fisherman (Korean-American) voiced this concern.

captain and crew. Some expressed concern that the presence of observers could affect the safety of their own crew:

- *Observers are really a problem because we don't want the liability on-board. They slow things down, they measure every single fish, and they are a big accident worry.*

- *Like with sharks—they [sharks] are hard to bring in because the line could snap. The observers have their job to do, we have ours, and those responsibilities clash. Sometimes they tell us to stop so they can see something. [But a boat] is not a car. Boats have momentum and you can't just stop. The line gains tension and it's dangerous.*

- *We had a male observer [once]. He was in the way a bit. We were slowed down because with sharks we have to bring them all the way in for the observer to see. Observers aren't trained; then we go through all this and the boat doesn't get reimbursed.*

- *Not too bad, but we worry because sometimes they [observers] don't know how dangerous this work is. When we catch shark they run up and look over to see. They don't understand that maybe the line will break and they'll get hit. We're responsible for them, so we worry.*

Concerns regarding accommodations were expressed by 12 percent of Vietnamese-Americans, and concerns related to food mentioned by nine percent. These issues were generally not the reason for dislike of the observer program, but were compounding factors. For some, the concern over food was quite strong, reflecting significant cultural differences between fishermen and observers.

In a number of cases, concerns over food and accommodations were considered in context with a general lack of trust of the monitoring programs. Fishermen reported fearing repercussion from an observer who was dissatisfied with the food or accommodations on-board. Vietnamese-American fishermen often believed that if the individual observer was dissatisfied, his or her reports would result in fines from an enforcement agency (again, often not differentiated, with fishermen stating 'fines from observers').

Female observers--About 12 percent of the Vietnamese-American fishermen mentioned having problems with female observers. These problems ranged from the cultural belief that women on-board were bad luck to concerns over the interaction between female observers and all-male crews. [16] Concerns with female observers were often explained in the context of accommodations, particularly emphasizing aspects of the vessel that were not conducive to male and female occupancy, including restroom and shower facilities, and sleeping arrangements:

[16] Some fishermen report fearing sexual harassment lawsuits that target the crew. This concern likely relates to awareness of a prominent case that previously occurred in the Hawaii longline fishery.

- *There are just so many problems, I can't explain. There are problems with the men observers too. But with the women the problems are ten times more. There are also many problems with safety and cost; also bad luck to have women on-board when menstruating.*

- *The boat only has four beds, so observers don't like to come on-board. There was one female observer about to come on-board while the vessel was in California, and she looked at the boat and introduced herself. Then the day of departure she had the flu.*

Jokes were often made by vessel owners about the male crew members hoping for female observers, and that crew were better mannered, well-groomed, and more polite when female observers were on-board.

Korean-American Owners and Captains

The Korean-American sample includes individuals who work on-board (owner/captains and captains[17]) and shoreside (vessel owners, co-owners, multiple vessel owners, and owner/suppliers). Of those discussing observer problems, half worked on-board (Table 12).

Similar to the Vietnamese-American fishermen, a majority (78 percent) of Korean-Americans reported some type of problem with the observer program. Unlike the Vietnamese-Americans, a larger proportion (60 percent) of the Korean-Americans reported problems as major rather than moderate in nature. Fifty-seven percent of those reporting major problems said problem stemmed from basic concern with the program, while 43 percent said problem stemmed from individuals or isolated incidents.

Table 12. Extent of Problems Reported by Korean-American Fishermen

	On-board	Not on-board	Total
No problems	2	2	4 (22%)
Moderate problems	2	1	3 (16%)
Major problems	5	6	11 (61%)
Total	9	9	18 (100%)

Of those on-board, 56 percent reported major problems most expressed as dissatisfaction stemming from specific individuals and incidents. Of those not on-board, 67 percent reported major problems, most expressed as dissatisfaction with the overall program rather than problems with specific individuals or incidents.

[17]Korean-American individuals working on-board reflect 47% of all Korean-American individuals discussing the observer problem. Notably, 84% of all Korean-Americans interviewed were involved to varied degrees with vessel ownership. Only two individuals interviewed reported operating as 'hired captain', with no form of ownership in the present or any Hawaii longline vessel; with the strong majority including individuals with varied forms of ownership.

The top four problems reported by the Korean-Americans were the presence of female observers, lack of trust of the program, observers decreasing on-board efficiency, and lack of an outlet to vent concerns (Table 13). Half of the Korean-Americans said that female observers were a problem, while close to half expressed a lack of trust in the observer program in general. Two of the Korean-American fishermen reported having just one of the specific problems, while two identified two problems, four identified three problems, two identified four problems, one identified five problems, one identified six problems, and one identified eight problems.

Table 13. Percent of Korean-American fishermen identifying each specific area as a problem.

Problem	Percent of total problems (%)	Number of responses
Female observers	50	9
Don't trust monitoring	44	8
Decreased on-board efficiency	33	6
No outlet for venting concerns	33	6
Not reimbursed adequately	28	5
Inadequately trained observers	22	4
Accommodations	22	4
Food requirements	17	3
Safety concerns	5	1

Concerns with the Program and Implementation

Problem areas associated with the overall observer program included lack of trust of monitoring, inadequate reimbursements from the observer program, and a lack of outlet for venting concerns related to the observer program.

Trust and uncertainty--Similar to opinions voiced by the Vietnamese-American fishermen, many Korean-American fishermen (44 percent) expressed their lack of trust of the observer program. A number of fishermen explained that they did not have an adequate understanding of the purpose of the program or how the data were used. Fishermen often requested answers to these types of questions from the researcher and interpreter. The Korean-Americans provided a number of examples of why they question the whole program and do not trust its implementation:

- *[The program is] pointless. Observers get seasick, they don't know what we're doing, and we don't know why they are even there. It's a bad system.*

- *The observer told us to bring in sharks to measure, but the captain didn't bring one in because it was alive and too dangerous for the crew to handle. On another boat, one crew member was injured while bringing in a shark for the observer. Where is the authority? It's our risk yet we're obligated to do what they tell us. They [the observers] need to exercise discretion in danger.*

- *Observers have too much power, get angry at us for something, and penalize things we do. They have their way and we don't have ours.*

- *Observers get angry at us and penalize us for things when they are mad.*

Reimbursement--Twenty-eight percent of Korean-American fishermen expressed frustration about the reimbursement element of the observer program, focusing on the system for obtaining reimbursement. Many stated it was confusing and partial to particular individuals. One fisherman heatedly expressed his dissatisfaction with reimbursement procedures, explaining that while he had repeatedly requested payment, it was received only after a 6- or 7-month delay. A number of fishermen expressed a range of similar complaints:

- *Reimbursements are not timely.*

- *There is no reimbursement system.*

- *There is no uniform method of payment.*

- *The food expenses add up, the reimbursement is just too slow. There is no unified method or timeframe for payment.*

Outlet for voicing concerns--Thirty-three percent of Korean-American fishermen asserted that the process of resolving conflicts with the observer program was frustrating and confusing, further leading them to believe that the observer program was, as one fisherman put it, a "one way street." Korean-American fishermen often reported that dissatisfied observers led to unhappy observers, creating penalties imposed on the fishing vessel. A number of fishermen felt that complaining to the observer program created a similar sentiment towards a given vessel. A variety of comments were elicited on this issue:

- *We get bad reports if there's one little thing they don't like. NOAA only listens to the observers. It's a bad system because NOAA only hears one side of things from someone who isn't trained and doesn't know what is happening on-board.*

- *There is nowhere to complain. Observers use entrapment; first they say that something we do on-board is no problem, then later they write a violation for it and we receive a fine.*

- *The government is out to get the Korean fishermen. We can't complain. It's just like the auction, because if we try to stand up and complain, then the repercussions are too strong. [In the case of the observer program] we'll be fined, they'll write something in the notes, or we'll get sued.*

Korean-American fishermen also addressed the notification process for obtaining observers. Some were inconvenienced by having to follow procedures in order to wait for

an observer, and a number of fishermen felt that time spent waiting for notification led to loss of valuable fishing time:

- *Notification is very inconvenient. We have to wait too long.*

- *Observers are a big problem. First, we have to notify them before we go out, and then wait to see if we get an observer assigned to us. Last year I had an observer almost every trip and it really creates fear among us. We used to think they were there to do research but now it's like they're watching us. There is a bad feeling about the whole arrangement.*

Concerns Arising from Specific Individuals or Incidents

Efficiency and training--Korean-American fishermen also were concerned about the effect of observers on fishing operations. The fishermen tended to argue that poorly trained observers and the process of observing itself tended to diminish the efficiency of their operations. Diminished fishing efficiency was mentioned by 33 percent of fishermen in this group, and training issues by 22 percent. The following comments show the range of concerns:

- *The observers are dangerous, unskilled, and not trained, and many, many problems stem from the fact that we have to please observers or they'll give a bad report.*

- *It slows down our work to bring fish all the way in just to be measured.*

- *Observers have a lack of proper training; this always creates safety hazards. We also have so many personal differences; but worst of all the observers use sneaky tricks – giving us permission for things then later giving us a fine for that. What can we do? Nothing. There is nowhere to complain to; this is a very, very big problem.*

- *The job of observers and the goals of the fishermen conflict; they don't match; we are on-board performing two different tasks that don't match. The result is slower work for us—then, when our goals conflict, who is in charge?*

Some Korean-American fishermen also indicated that social-behavioral factors and cultural differences underlie some of the problems they encountered on-board:

- *Observers are disrespectful to crew—dancing, playing music, and exercising while crew work. It's so rude. Some have short tempers and yell at the captain.*

One captain (laughing when he told the story) said that he told an observer to inform him before he went anywhere on the boat, and added that there were 10 to 12 knots of wind and he really shouldn't be up high. The observer didn't obey but the

captain said he didn't ask again. The captain also said that when the crew would haul in sets, the observer would stay on deck and listen to music, dancing and jumping around. The captain said his crew was very bothered because it was disrespectful; they were all working and this guy was dancing. The captain then told three or four stories of observers submitting bad reports when there were differences between the captain and the observer.

More than one Korean-American fisherman felt that the observer training was inferior to their own, summed up by one vessel owner's expression that 'Haoles just don't know fishing.'

Food, accommodations, and safety--Vessel accommodations were considered a problem by 22 percent of Korean-American fishermen, while 17 percent listed food issues. Fishermen often expressed concerns that accommodations were either unsuitable for both males and females or that the boat did not have room for the additional person (male or female). Accommodation issues were also often mentioned in conjunction with lack of trust in the observer program. For instance, some fishermen commented that if observers were unsatisfied with accommodations or food, then the observer would find a way to penalize the vessel in their report. Only one Korean-American fisherman voiced a safety concern.

Female observers--Half of the Korean-American fishermen finding problems with the observer program expressed dissatisfaction with the on-board presence of female observers. This was the most commonly expressed problem among Korean-American vessel owners. Comments often reflected the perceived potential for inappropriate behavior by crew. Some fishermen believed the presence of female observers opened the door for potential lawsuits over sexual harassment. Vessel owners and captains expressed dissatisfaction that they were liable under such circumstances, as well as concern about potential litigation costs

Of those expressing trouble with female observers, more than half explained that the fishing vessels were not made to accommodate males and females. Twenty percent simply said females should not be allowed on-board. One Korean-American fisherman explained that he was not willing to fish with female observers and had relayed his position to a representative of the observer program. He believed that his complaints were successful because the program no longer selected female observers to work on-board his vessel. A range of related issues was identified, including some positive effects:

- *Many people have had problems with female observers. It's really a problem for some because of the crew.*

- *Maybe four trips of mine last year (of eight) we had observers. Luckily for me, in my case, they weren't too bad—with the exception of the gender problems. The facilities really aren't made for that; there aren't even separate facilities.*

- *Female observers on-board are really a problem. The sleeping arrangements just too difficult.*

- *The vessel is just not equipped for females at all. There isn't even a bathroom.*

- *The best part of the observer program is female observers. The crew works harder and showers. Sometimes they shower so much the boat runs out of fresh water. If there are any problems on-board the captain always handles them. It's always been successful.*

Euro-American Owners, Captains, and Hawaii-based Crew

Unlike the Vietnamese-American and Korean-American fishermen, only a small group of Euro-American participants reported some type of problem with the observer program. Just 31 percent (six individuals) reported any problem at all, with 5 percent (one individual) identifying the problems as major (Table 14). As for the other ethnic groups, the Euro-American fishermen included individuals present on-board in the fishing grounds and those who were not. Those involved with on-board activities made up more than three-quarters of those interviewed.

Table 14. Extent of Problems Reported by Euro-American Fishermen, By On-board Status

	On-board	Not on-board	Total (%)
No problem	11	2	68
Moderate problems	4	1	26
Major problems	1	0	5
Total	16	3	100

The top three problem areas mentioned were inadequately trained observers, lack of trust of the program, and observers decreasing efficiency. Three fishermen identified one problem area, three fishermen identified two and no one identified three (Table 15).

Table 15. Percent of Euro-American Fishermen Identifying Each Specific Area as a Problem

Problem	Percent of total problems identified (%)	Number of responses
Inadequately trained observers	44	4
Don't trust monitoring	22	2
Decreased on-board efficiency	22	2
Not reimbursed adequately	11	1
Accommodations	0	0
Female observers	0	0
Food requirements	0	0
No outlet for venting concerns	0	0
Safety concerns	0	0

In contrast to the higher levels of concern reported by Vietnamese-American and Korean-American fishermen, problems mentioned by the Euro-Americans were often considered minor or relatively insignificant. In fact, when the Euro-American fishermen stated a problem, it was often conditioned by assertions that the problem was really "no big deal." One Euro-American owner-operator indicated that while some changes in operations were required on his behalf, these were quite acceptable:

- *Oh, we have observers and there is absolutely no problem. We had two: both were on trips with the relief captain, not me. My wife doesn't like female observers on-board, so when we are assigned female observers, the relief captain has to go. When I do get to go with (male) observers, I like the company. Usually it's just me and my foreign crew, and there are language barriers. After the observers, payment arrived without any problem.*

One hired captain's positive evaluation was coupled with a caveat:

- *I like trips with observers. That gives me someone to talk to—except when they are nerds and drive me crazy. That happened only one time and I brought the observer back (early). They gave me another one because I didn't fish enough sets. But the second one was much better.*

For the most part, Euro-American vessel owners, captains, and crew simply stated that the observer program was fine and posed no significant problems. More than one fisherman spoke of observers in an endearing way. Some individuals expressed opinions of what made the program acceptable, and some did not:

- *Observers are no problem. We had one, it was fine.*

- *Observers are fine. We usually have lots of fun with them*

- *Some of the people, who work with the observer program, are people I knew from when they were just observers themselves. I've watched them work their way up.*

- *They're mostly college graduates, taking their first job, and don't know the ropes . . . Sometimes it's hard for the female observers to be around the male crew, so I try to help them out.*

Problems with the overall observer program and with individuals were rarely discussed by the Euro-American fishermen interviewed. With few exceptions, the general attitude toward problems that were revealed was one of minor annoyance and inconvenience rather than major difficulty. As one fisherman explained, "*observers are an annoyance; they never reimburse us, [but] it's more of an annoyance to deal with.*"

Trust and uncertainty--Lack of trust of observer monitoring was mentioned only twice by Euro-American fishermen. While these individuals reported dissatisfaction with

the concept of the observer program, this appeared to be related to a larger set of regulatory issues:

- *I remember fishing without such monitoring; I just don't like the authority of institutions, reflected by the observer program and all the other enforcement programs out here. Observers are just another check.*

Reimbursement and outlets for voicing concerns--Reimbursement was mentioned only once (as provided above). None of the Euro-American fishermen complained about a lack of venue for voicing concerns about the program or individual observers.

Efficiency, training, and other issues--The highest frequency concern for the Euro-American fishermen, mentioned four times, related to perceptions of observer training. Concerns about observers slowing fishing operations were mentioned twice. No Euro-American fishermen listed on-board safety, food, accommodations, or female observers as problems. As discussed above, training and fishing efficiency concerns were considered as annoyances rather than impediments:

- *Sometimes observers are a hassle, they slow us down, but really it's not a big deal.*

- *Some observers themselves are okay, some are an inconvenience; just a pain.*

Filipino Crew

The other major ethnic group present during the study period was the Filipino crew members working on 1-year contracts. Most Filipino crew reported having no problems with observers (Table 16). Moreover, a sizeable minority (13 percent) reported that they preferred having observers on-board. Analysis revealed that of the 28 percent of participants who reported moderate problems, most were not with particular individuals, but rather with the presence of any observer on-board. Just three percent reported specific problems with individuals.

Table 16. Extent of Problems Reported by Filipino Fishermen

Extent of problems	Percent selecting each level (%)
No problems	57
Moderate problems	28
Prefer observers	13
Major problems	2

Given that the experiences by Filipino crew members were limited to interactions with observers at sea, they were not asked to discuss the full range of programmatic issues and nine problem areas. Instead, each Filipino fisherman was asked about their experiences with observers in general. Many crew discussed their opinions of the observers while considering the perceived effect of the observer on the vessel operator.

Some crew noted changes in the behavior of the captain, for example, and subsequently attributed these changes to the observer. Personal opinions of observers were frequently affected by perceived on-board changes—positive or negative, drastic or subtle—that occurred as a result of the observer's presence.

Following is a description of some of the perceived positive aspects of observers, followed by a discussion of some of the perceived negative effects. Some crew reported both positive and negative aspects of having observers on-board.

Preference for Observers

Filipino crew members who reported a preference for having observers on-board typically offered one of three reasons: (1) vessel operators treated crew better with observers present; (2) observers were a good source of fishery information; or (3) the additional company was enjoyable. Although limited numbers of vessel owners, captains, and/or Hawaii-based crew revealed personal relationships with observers, these were quite commonly reported by Filipino crew. These relationships were generally highly valued. Crew reported turning to observers as friends and to answer questions regarding fishing and acculturation to Hawaii. Crew often considered particular observers as part of an extended social network and there were some reports of crew dating female observers.

Observers improve working conditions--One of the most commonly stated reasons that crewmen preferred observers on-board was that vessel captains/operators were more polite to crew when observers were present:

- *No problems; try to turn to them for help regarding the captain's bad practices. We hope that the observer will make captain have better behavior—at least towards the crew.*

- *Captain doesn't yell as frequently. Plus the food and provisions on-board are much better when an observer is present.*

- *No problems; I've worked with observers and it's okay—actually it's better because the captain is nicer to us.*

- *The captain is nicer when we have observers.*

- *Owner is nicer in fishing ground when observers are with us.*

One Filipino crewman who favored having observers on-board because it improved the captain's treatment of crew said that the physical work conducted by observers also was useful. He even said that some of the observers accomplished more fishing-related work than did some of the other foreign (non-Filipino) crew.

Observers provide information--A number of Filipino fishermen reported that the observers were a reliable source of information about fishing regulations. Crew working on Vietnamese-American and Korean-American vessels sometimes expressed difficulty communicating with vessel operators because of language barriers but reported more effective communication with observers. As such, some crew members reported feeling comfortable asking questions of observers:

- *No problems; observers are a great source of information about fishing regulations.*

- *No problems; prefer observers on-board because they are fun, and add something new to the monotony of fishing. They also answer questions and provide information about regulations.*

Observers provide companionship--Filipino fishermen reported that the presence of observers was preferable simply because they were good company. Crew members often expressed boredom with their job and felt observers eased the monotony of fishing for long time periods. The Filipinos told stories of joking and laughing with observers and reported that they were sometimes uplifted by their presence:

- *Observers are no problem. We [Filipino crew] like to have observers around for company—we can talk with them, and make jokes. They are good company; no problems.*

- *No problem with observers; boat has space for lots of people, so it's no problem. The observers are sometimes enjoyable to have around; someone different.*

- *Nice to have them around, more interesting to have someone new there, and if we ever have a bad captain it's even better to have the company.*

- *It's nice to have observers around, sometimes; it just makes our work less boring.*

Many Filipino crew members remained in contact with certain observers after their trips at sea. These individuals generally took pride in their relationships with persons of other ethnicities (i.e., non-Filipino). The fishermen were often proud if observers would learn small phrases in a Filipino language, or share Filipino food or other aspects of the Filipino culture. Filipino crewmen often stated that observers were influential in assisting with continued learning of the English language and American culture. A number of favorable comments were specific to female observers:

- *Last trip there was a female observer and our boat doesn't have enough beds—so I offered to give the observer mine, and slept on the cot. I never would have done that for a male observer!*

- *I have friends that are female observers. It's great when females come on-board. Overall the observers slow us down, but that's no problem.*

- *It just depends on the individuals. Some people are very nice to have around and some aren't. Some make things take too long, but that's okay. One of the female observers is my good friend.*

- *Observers decrease our catch. But overall I like the different company, particularly when we have female observers. I have remained friends with some observers and enjoy their company.*

- *Sometimes we work harder when female observers are around. We want to look good!*

Problems with Observers

Twenty-seven percent of Filipino crew identified decreased productivity as a problem stemming from the observer program. This problem constituted 90 percent of all complaints expressed. For most, any slowdown in operations resulted in a moderate financial loss; although nearly all crew were paid a monthly salary (rather than shares), many also received a bonus per trip based on catch. One Filipino crewman explained that observers decreased the speed of work on-board, adding that the situation was further aggravated because his captain forbade crew from talking with observers. A number of comments reflected this concern:

- *Observers slow down our work, decrease the catch—we work more and are paid less.*

- *We just can't make as much money, we work slower with observers.*

- *Observers decrease what we catch, and what we earn.*

- *The primary problem is that the observers slow down our work; but it's also very dangerous because when observers are on-board we always have to bring in live sharks, and it's very dangerous to do that.*

Some Filipino crew reported satisfaction with observers on a personal level, but expressed dissatisfaction about losses in fishing efficiency and associated earnings:

- *I have very good friends that are observers. But when they come we work slow on-board, and can't earn as much money. But many observers are my friends.*

- *When observers are on-board it slows down work. They are generally inconvenient to have around. Some are personally a problem, but not most. I still talk to some now; they come and visit because they are my friends.*

- *It's very nice to have female observers. The other observers . . . sometimes the people are nice and fun, but mostly they are really just difficult. Overall they*

make us catch less fish, they slow down our work, and they generally are just inconvenient to have around.

One individual stated that observers were no good because they lowered the catch. Further prompting revealed that the individual had never actually worked on a vessel with an observer, but had heard this from fellow crewmen.

When crew members reported that the presence of observers decreased productivity, catch or earnings, researchers asked about relationships between the observers and the decreased productivity. Financial losses were felt to varied extents, with the smallest generally being in the form of decreased landings resulting in a decreased catch bonus (bonuses are generally paid to crewmen as $10 per ton). More substantial financial losses were felt by those on-board a limited number of vessels, where owners and/or captains paid with some form of incentive, generally in the form of a percentage of either catch or sales. Larger financial losses were faced by crew on vessels where shark finning took place; this currently illegal activity is not conducted when observers are present.

Few Filipino crew noted that observer presence was a source of aggravation for the vessel owner or captain; some were indifferent about such aggravation, while some found it problematic.

- *I have no problems with observers, they are fine. Only the captain doesn't like them because he doesn't like to have people watching him. We (crew) don't mind.*

- *Owner is always very unhappy when there is an observer on-board. But it's not too much different for our work; the vessel sleeps six so there is adequate space for observer.*

- *I've worked with a number of observers; I have no problem with the program. Sometimes I don't like particular individuals, and sometimes I notice that captain doesn't like observers, but I don't mind the whole thing*

- *No problems with observers. The captain's wife doesn't allow female observers on-board so we always have male observers. They are nice, no trouble.*

CONCLUSIONS

The preceding sections of this report reveal extensive variation in fishermen's perspectives on the Hawaii longline observer program. Some fishermen expressed numerous concerns about the program and/or individual observers and indicated these were major problems, while others expressed satisfaction with the program and its agents. Of significance in the complex socio-cultural context of Hawaii's longline industry, analysis revealed that variation appears to relate in large part to fishermen's ethnic background and role in the industry.

Some concerns, particularly those relating to trust and fishing efficiency, were expressed to some extent by fishermen of all ethnic backgrounds. It is not surprising that concerns and problems exist. Fishermen and observers undertake distinct roles that are sometimes conflicting in nature. While the ultimate intent of the observer program is to yield benefits for the marine environment, their presence is not necessarily perceived by the fishermen as beneficial to their operations. Further, the process of observing fishing operations is by nature intrusive, inviting feelings of being watched. Fishermen's suspicions of the program may stem from perceptions that observers are on-board because "the government" does not trust fishermen to report endangered species interactions or to properly handle species when hooked.

Vietnamese-American and Korean-American fishermen expressed much greater concern about a broader range of aspects of the observer program than did the Euro-American fishermen. Many participants in these former groups appeared to view the observer program as another indicator that NMFS is "out to get them." As such, it may have been difficult for these fishermen to separate the effects of observers from the larger context of federal regulatory oversight. In other words, they viewed observers and the program through their "NMFS lenses" that predisposed them to have problems.

Their difficulties with the program may also relate to additional challenges not faced by the Euro-American fishermen. For example, some individuals within the Vietnamese-American component of the fleet are still gaining familiarity with American culture and the English language, and with the culture and language of the observer and regulatory program itself.

The fishermen of different ethnicities may also have had experiences with observer programs and regulations in other fisheries that led to differences in perceptions of the Hawaii-based regulations. For example, much of the Vietnamese-American fleet came to Hawaii from the Gulf of Mexico shrimp fishery, the only fishery in the U.S. with a voluntary observer program and historically minimal reporting requirements; a federal fishing permit was mandated only recently, and no logbook program existed as of 2005 (Curtis 2005). In contrast, the Euro-American owners may have had a wider range of experience in other, more heavily regulated fisheries, making the Hawaii observer program and broader regulatory context seem more palatable (Curtis, 2005).

Another possible explanation for the ethnic differences in responses to observers may relate to cultural styles of self-expression. The researcher and interpreters noticed a marked difference in how animated and vocal some fishermen became when talking about a particular incident while other fishermen, describing a similar event, would be much more low-key. This has some implications for interpreting "moderate" vs. "major" levels of concern about aspects of observers and the observer program, although we believe these categories remain meaningful.

Implications for Observer Programs

The owners, captains, and Hawaii-based crew (many of whom are previous or potential captains) are the group of interviewees in whom the program should be most interested. Nearly two-thirds of this group reported having problems of some type with the program and/or the observers. However, this proportion, and the nature of the problem, varies substantially by ethnic group.

An obvious and significant implication is that consideration of fishermen's perceptions, concerns, experiences, and ethic-cultural backgrounds could prove useful in training observers to succeed in their own work while minimizing disruption of fishing operations and the lives of fishermen at sea. In the case of fishermen who associate observers and the overall program with antagonistic management, the behavior of individual observers may not make a difference.

However, many of the fishermen's concerns, such as those dealing with cultural issues and proper protocol on-board, could be addressed through greater awareness of the subtleties of Vietnamese, Korean, and Filipino culture and the manner in which the captains, crew, and vessel owners negotiate the many challenges associated with longline fishing in the Central and Western Pacific. With awareness and understanding then, individual observers have the potential to contribute positively to the at-sea experiences of longline fishery participants, and in so doing may change at least some fishermen's attitudes toward the observer program.

Additionally, consideration of inter-group variation and trends in the types and extent of perceived problems could prove useful to program planning and related outreach and communication efforts. Cultural awareness training must be specific to the ethnicities that the observer will encounter. Generic cultural discussions will not provide an observer with the information necessary to anticipate and make adjustments for differences specific to a particular culture.

Analysis of the perspectives of Filipino crew members also provides a unique opportunity for observers to better understand the full range of implications of their presence on Hawaii longline vessels. Discussions with crew members also provided insight into many topics or perceptions that owner/operators may have been hesitant to discuss. These crewmen generally expressed satisfaction with individual observers and took great pride in nurturing personal relationships with them. Many crewmen considered observers an extension of their social network in Hawaii and valued their instruction in the subtleties of American culture. Filipino crewmen often acknowledged the importance of professionalism among observers, and many considered observers good sources of information about regulatory aspects of longline fishing in the region.

This research may also be useful for observers or prospective observers preparing for or considering a voyage aboard a Hawaii longline vessel in the western or central Pacific. The Pacific Islands Regional Office field manual for observers (Hawaii Longline Observer Program, 2003) provides some indication of the nature of life at sea for

observers and recommendations that the observer should strive for good relations on-board. But as noted in the following passage from the manual, there is no guidance for actually achieving mutually satisfactory relationships with captain and crew in a setting that is not only physically challenging, but, perhaps more significantly, highly challenging in social and cultural terms:

> When stepping on to a fishing vessel for one day, one week or one month, you the observer are entering a workplace and a home. It is a place where the crewmen have already established a system of communication and responsibilities. An individual observer's ability to deal with the situation is a reflection of the person's flexibility and resiliency. The environment can be lonely, unwelcoming, cramped, and sometimes hostile. Your sleeping and eating habits will definitely be disrupted. The quality of your working relationship with the crew can be more important to the overall nature of the trip than the nature of the vessel itself. A good working situation with the crew makes a good trip. A good working situation on a good boat makes a great trip!

Analysis of the perspectives of fishermen involved in this study clearly indicates that the on-board relationship between fisherman and observer is a critical link between the agency responsible for managing pelagic fish resources in the region and the fleet pursuing fish. As the intent of the observer program is to enable fishing to continue with minimal effect on endangered species, it is in the best interest of government to facilitate effective communication between fishermen and observers. The longline observer program in Hawaii would most effectively meet its objectives by establishing means for observers to acquire the language and cultural skills necessary for positive and minimally intrusive interaction with vessel owners, captains, and crew members. This would improve communication between individual observers and fishermen, while also enhancing trust between NMFS and a population of resource users it is mandated to serve. Currently, observers going out on a vessel can review a file of previous observer notes for that vessel to get an idea of what to expect. Additional training on cultural awareness could supplement this type of information.

The study revealed widespread confusion and uncertainty about the overall observer program. There was, for example, a common misconception that the observer program is responsible for a wide range of regulatory actions including fines, and that observers themselves are enforcement agents. Now that this confusion is understood, agencies can take further steps to reduce it through targeted communication with fishermen..

Such communication could be part of an attempt to provide fishermen with more opportunities for interacting with NMFS, as recommended by a recent Office of Inspector General's report (U.S. Department of Commerce 2004) and concurred with by NMFS.[18] That report noted that a number of observers and fishing industry representatives "had

[18] This OIG audit reviewed seven regional NMFS observer programs, which did not include the Pacific Islands program managed out of Honolulu.

expressed concern that NMFS does not seem to have a comprehensive grasp of current concerns and issues within the fishing community" (p. 38) and that additional efforts to understand these concerns could help to build relationships and establish trust. Some of the fundamental issues fishermen have with the observer program and the placement of observers on fishing vessels are not likely to go away. However, several specific areas of concern, such as prompt reimbursement and provision of outlets for venting concerns, could be addressed fairly easily.

Implications for Future Research

This study has made clear that perspectives on Hawaii's longline observer program are often influenced by the ethnicity, role in the industry, and experience of the vessel owners, captains, and crew members in question. It has also made clear that the behavior of the observer at sea can detrimentally affect those perspectives and the reported level of satisfaction with the program in total.

Fishermen largely agreed that having observers on-board decreased the efficiency of their fishing operations. This would appear to be a testable hypothesis for tuna vessels. Because observers are randomly assigned to about 20 percent of the tuna fishing trips, it should be possible to design an analysis that compared the catch per unit effort of trips with observers compared to trips without observers, controlling for other variables as appropriate.

Having systematically studied fishermen's perceptions of observers, it may now prove useful to similarly study the perceptions and experiences of observers. The present study suggests many hypotheses about interactions among fisherman ethnicity, observer ethnicity and gender, and other variables that may determine the ability of fishermen and observers to each meet their own goals while not impeding the others'. Understanding the implications of these relationships can lead to the development of both improved observer training and improved outreach programs targeted to fishing vessel crew, captains, owners, and their families that stand a better chance of eliminating misunderstandings about the program and possibly developing mutually agreed standards for observer training and behavior while aboard fishing vessels and for other concerns that this research has identified.

Certain aspects of the real-time behavioral interface between fishermen and observers may deserve additional attention. In this sense, at-sea observation and systematic description of the process of observing itself could prove useful in validating and/or furthering understanding the perspectives of the fishermen and the on-board behavior and experiences of observers. One potential problem with this approach—and likely also inherent in the longline observer program—is that one's behavior often changes if one knows one is being observed.

Given random and periodic assignment of observers to longline vessels, sustained work on a given vessel may be difficult to achieve in the observer program. This is

another reason to enhance open and effective communication and understanding among fishery participants, observers, and program administrators. Sustained social research in this arena may contribute significantly to that end. Such research, and comparative research with longline observer programs elsewhere, could promote clear understanding of the full range of implications of observer-fisher relationships. This can only benefit Hawaii's longline observer program, the region's longline industry, and the marine environment itself.

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